Master Syllabus Department of Geography

GEOG 331/531: Global Climatology

Course Description

Introduction to the dynamics of the global climate system. Emphasizes the physical processes that force spatial variability in climate, and the feedback mechanisms associated with global teleconnections and climate change. (3 credit hours).

Prerequisite: GEOG 230

Course Objectives

The objectives of the course are to:

- Explain the role of radiation as a driver of the earth's climate system
- Examine the atmosphere as part of a system that includes oceans and the land surface
- Describe the feedbacks between the earth and the atmosphere and between various spatial locations
- Assess the impact that large-scale atmospheric processes have on local and regional climates
- Differentiate between weather and climate phenomena
- Understand the global-scale circulation of the atmosphere

Course Rationale

This course is part of both Option IV's General and Professional Meteorologist Tracks, the latter of which is designed to meet the requirements for employment by the National Weather Service (NWS) as a meteorologist (GS-1340). Meteorologists are required to have an understanding of general climate circulation and processes, since they play roles in weather phenomena and influence forecasts.

Course Content and Format

The course material focuses quantitative (algebra-based) and qualitative analysis and understanding of the climate system. Topics may include: energy and matter within the climate system; fundamental forces and the atmosphere; climate classification; atmospheric teleconnections; components of the climate system; and the hydrologic cycle.

Department of Geography 2 Master Syllabus: GEOG 331-531

The course format is a combination of lecture and discussion. Students are actively encouraged to participate in discussions, as well as deliver presentations on relevant topics or journal articles.

Textbook Suggestions

Climatology, 2nd edition (Robert V. Rohli and Anthony J. Vega), Jones & Bartlett Learning, 2012

Contemporary Climatology, 2nd edition (Peter Robinson and Ann Henderson-Sellers), Prentice-Hall, 1999

Methods for Evaluating Student Performance:

Student performance will be evaluated via some combination of the following methods:

- Examinations
- Homework exercises
- Participation in class discussions
- Group presentations or projects
- Presentations
- Quizzes

Students enrolled in GEOG 531 (graduate level) will be required to complete additional work (such as a term paper, lecture on specialized topic relevant to the course).

Evaluation of the Course

Student evaluation of the course will be accomplished using university (and departmental) course evaluation forms. Departmental evaluation may include peer or chair evaluations.